

PLUG AND ABANDONMENT PROCEDURE/RE-ENTER

WARDELL H 19-5

- | Step | Description of Work |
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| 1 | Locate and expose 8 5/8" casing stub. Extend stub to surface and install 8 5/8"x 11" SOW, 3M casing head with 3000 psi ball valves in both outlets. Prepare location for workover rig. Install perimeter fence as needed. |
| 2 | Provide notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). |
| 3 | MIRU workover rig. NU 9" 3000 psi BOP stack on casing head. PT BOP and csg head per approved Form 2. Function test BOPE . NU rotating head on BOP. Hook up return line to shale shaker on flat tank |
| 4 | PU 7 7/8" mill tooth bit, necessary drill collars and drill pipe/work string (WS). Drill through existing cement plugs at surface (10 sk) and at the base of surface casing (100 sk plug ~540'-702') using fresh water with biocide. |
| 5 | Once surface cement plugs are drilled, Displace hole with drilling mud and continue going in hole. Drill out Cement plug at 3400'-3500'. |
| 6 | RIH to stub of 2 7/8" casing @ 5996'. TOH and LD drill collars and bit. |
| 7 | RIH WS open-ended to 5980'. Circulate and condition hole for additional cement plug. |
| 8 | Run gyro survey from PBSD to surface. |
| 9 | RU Cementers. Spot cement plug consisting of 100 sx "G" w/20% silica flour, 0.4 % CD-32, 0.4% ASA-301 and R-3 To achieve 2:30 pump time. Mix at 15.8 ppg and 1.38 cuft/sack. Calculated top of plug 5800' based on 10" hole with 40% excess. Caliper log from offset well. POH to ~5000' and circulate clean. WOC per cement company recommendation. |
| 10 | Tag top of plug at 5800'. TOH to 4780' |
| 11 | Spot cement plug consisting of 330 sx "G" w/0.25pps cello flake, 0.4% CD-32, 0.4% ASA-301 with CaCl ₂ as necessary. Mixed at 15.8 ppg, 1.15 cuft/sack. Cement to be preceded by sodium metasilicate mixed in 20 bbls water per cementing company recommendation. Calculated top of plug 4370' based on 11" hole with 40% excess. |
| 12 | POOH to ~ 3000' and circulate clean. WOC per cement company recommendation. Tag plug at 4370'. LD WS to place end of WS at 1430'. |
| 13 | Spot cement plug consisting of 440 sx Type III w/cello flake and CaCl ₂ as deemed necessary, mixed at 1.53 cf per sack, 14.0 ppg. POH and WOC per cementing company recommendation. Plug size is based on 10" hole with 40% excess covering 1430' to shoe of surface casing at 655' plus capacity of surface casing to 450'. TOH and WOC per cement company recommendation |
| 14 | Tag top of plug at 450'. POOH and LD WS. |

- 15 RU wireline. Run and set CIBP in the 8 5/8", 24# surface casing at 80'. PT CIBP and surface casing to 1000 psi for 15 minutes. Assuming successful test, RD wireline.
- 16 RDMO workover rig.
- 17 Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hrs of completion of the job.
- 18 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 19 Excavate hole around surface casing of sufficient size to allow welder to cut off 8 5/8" casing at least 5' Below ground level (depending on land owner requirements).
- 20 Fill surface casing with cement (4500 psi compressive strength, no gravel).
- 21 Spot weld steel marker plate on top of sfc casing stub. Marker shall be labeled with well name, well number, legal location (1/4 1/4 descriptor) and API number.
- 22 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
- 23 Back fill hole with native material. Reclaim location to landowner specifications
- 24 Submit Form 6 to COGCC. Provide "As plugged" wellbore diagram identifying the specific plugging completed.

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